

CA20N  
LF  
-59 H17

GOVT

Government  
Publications



# HARDWOOD TREES

*of Ontario*

WITH BARK CHARACTERISTICS

By E. J. ZAVITZ, B.A., M.S.F., LL.D.

ONTARIO DEPARTMENT



OF LANDS AND FORESTS

Spooner, Minister

F. A. MacDougall, Deputy Minister







CA20N (5)  
LF  
-59 H17



# HARDWOOD TREES

*of Ontario*

WITH BARK CHARACTERISTICS

By E. J. ZAVITZ, B.A., M.S.F., LL.D.

ONTARIO DEPARTMENT



OF LANDS AND FORESTS

*Hon. J. W. Spooner, Minister*

*F. A. MacDougall, Deputy Minister*



Digitized by the Internet Archive  
in 2022 with funding from  
University of Toronto

<https://archive.org/details/31761115472805>



Ontario . Lands & forests dept.  
General publications ]

CA20N  
LF  
59417

56-11 ]

# HARDWOOD TREES

## *of Ontario*

---

WITH BARK CHARACTERISTICS

---

By E. J. ZAVITZ, B.A., M.S.F., LL.D.



ONTARIO

*Published by Baptist Johnston, Printer to the Queen's Most Excellent Majesty*

1959





## *Preface*

In all ages, trees have been the outstanding product of the soil. When white men first reached Ontario there existed a magnificent forest. Few of the monarchs of this forest remain, but a few records exist as to age and size of some of these remarkable trees.

In preparing this publication the author had two primary reasons. First: to preserve records of a few trees of exceptional size and character, some no longer available. The author has photographic records of the once valuable Chestnut, now all but extinct. Apparently the Elms may have a similar fate. Secondly: The presentation of the tree with the main emphasis on the bark characteristics. In travelling in the forest, where the crown of the tree is not within sight or reach, one must recognize the bark. The leaves, buds, flowers and the more technical botanical features of our trees are ably described in "The Forest Trees of Ontario" by White and Hosie, published by The Department of Lands and Forests, Ontario, and "The Native Trees of Canada", Bulletin 61, by The Department of Mines and Resources, Ottawa. With some of the less common trees, reproduction of leaves, flowers and fruit have been taken from "The Forest Trees of Ontario".

Nomenclature follows that of Gray's Manual of Botany, Eighth Edition by M. L. Fernald.



# *Index*

CALICACEAE FAMILY		Page
Salix Genera—Willows		
Salix nigra—Black Willow .....		5
Populus Genera—Poplars		
P. tremuloides—Trembling or Quaking Aspen .....		5
P. grandidentata—Large-toothed Aspen .....		5
P. deltoides—Cottonwood .....		5
P. balsamifera—Balsam Poplar .....		5
JUGLANDACEAE WALNUT FAMILY		
Juglans Genera—Walnuts		
J. nigra—Black Walnut .....		6
J. cinerea—Butternut: White Walnut .....		6
Carya Genera—Hickories		
C. cordiformis—Bitternut Hickory .....		6
C. ovata—Shagbark Hickory .....		6
C. laciniosa—Kingnut, or Big Shellbark .....		6
C. tomentosa—Mockernut .....		7
C. glabra—Pignut .....		7
C. ovalis—Sweet Pignut .....		7
CORYLACEAE FAMILY		
Ostrya Genera		
O. virginiana—Ironwood or Hop-Hornbeam .....		7
Carpinus caroliniana—Blue Beech .....		7
Betula lenta—Cherry or Black Birch .....		7
lutea—Yellow Birch .....		8
populifolia—White or Grey Birch .....		8
papyrifera—Paper or Canoe Birch .....		8
FAGACEAE FAMILY—BEECH FAMILY		
Fagus grandifolia—Beech .....		8
Castanea dentata—Chestnut .....		8
Quercus Genera—Oaks		
Q. alba—White Oak .....		9
Q. macrocarpa—Mossy-cup Oak .....		9
Q. Muehlenbergii—Yellow Oak .....		9
Q. prinus—Rock Chestnut Oak .....		9
Q. rubra—Red Oak .....		10
Q. velutina—Black Oak .....		10
Q. palustris—Pin Oak .....		10
Q. bicolor—Swamp White Oak .....		10
ULMACEAE FAMILY		
Ulmus Genera—Elms		
Ulmus rubra—Slippery or Red Elm .....		10
Ulmus americana—American or White Elm .....		11
Ulmus Thomasi—Rock Elm .....		11
Celtis occidentalis—Hackberry or Sugarberry .....		11



MORACEAE FAMILY	Page
<i>Morus rubra</i> —Red Mulberry .....	11
MAGNOLIACEAE FAMILY	
<i>Magnolia acuminata</i> —Cucumber Tree .....	11
<i>Liriodendron</i> —Tulip Tree .....	12
ANNONACEAE FAMILY	
<i>Asimina triloba</i> —Pawpaw .....	12
LAURACEAE FAMILY	
<i>Sassafras albidum</i> .....	12
PLATANACEAE FAMILY	
<i>Platanus occidentalis</i> —Sycamore or Buttonwood .....	12
ROSACEAE FAMILY	
<i>Amelanchier canadensis</i> —June-berry or Shadbush .....	13
<i>Prunus pennsylvanica</i> —Pin or Fire Cherry .....	13
<i>Prunus serotina</i> —Black Cherry .....	13
LEGUMINOSAE FAMILY	
<i>Gymnocladus dioica</i> —Kentucky Coffee Tree .....	13
<i>Gleditsia triacanthos</i> —Honey Locust .....	14
<i>Cercis canadensis</i> —Redbud or Judas Tree .....	14
<i>Robinia pseudo-acacia</i> —Black Locust .....	14
RUTACEAE FAMILY	
<i>Ptelea trifoliata</i> —Hop Tree .....	14
ACERACEAE—MAPLE FAMILY	
Acer Genera—Maples	
<i>Acer saccharum</i> —Sugar Maple .....	15
<i>A. nigrum</i> —Black Maple .....	15
<i>A. rubrum</i> —Red or Soft Maple .....	15
<i>A. saccharinum</i> —White or Silver Maple .....	15
<i>A. pennsylvanicum</i> —Striped Maple .....	15
<i>A. spicatum</i> —Mountain Maple .....	16
<i>A. platanoides</i> —Norway Maple .....	16
<i>A. pseudo-platanus</i> —Sycamore Maple .....	16
<i>A. negundo</i> L.—Manitoba or Ash-leaved Maple .....	16
TILIACEAE—LINDEN FAMILY	
<i>Tilia americana</i> —Basswood or Linden .....	17
NYSSACEAE—SOUR GUM FAMILY	
Genus <i>Nyssa</i> —Tupelo or Pepperidge .....	17
CORNACEAE—DOGWOOD FAMILY	
<i>Cornus florida</i> —Flowering Dogwood .....	17
OLEACEAE FAMILY	
Fraxinus Genera—Ash	
<i>Fraxinus americana</i> —White Ash .....	18
<i>F. pennsylvanica</i> —Red Ash .....	18
<i>F. quadrangulata</i> —Blue Ash .....	18
<i>F. nigra</i> —Black Ash .....	18



## GENUS SALIX — The Willows

Gray's Manual of Botany lists 54 species, mostly shrubs. The Willows hybridize freely, which makes the Genus *Salix* rather difficult for many botanists. A hybrid plant is the offspring of two species of the same genus.

The Forest Trees of Ontario lists six native tree willows, and four imported willows. For this publication the author gives the most common and largest of our native tree willows.

### BLACK WILLOW—*S. nigra* (*illustrated Page 19*)

This is the common native species of tree willow and is usually found growing in moist sites. It has the habit of growing in several stout stems in a cluster.

The bark is dark brown, thick, rough and deeply furrowed.

## GENUS POPULUS — The Poplars

The Poplars are a group of rapid-growing, usually short-lived trees. Poplar, especially the Aspen, is common in Ontario following fire when it becomes an important factor as a nurse crop for other species, also a soil improver.

Once looked down on as of little value, it is today becoming an important factor in forest production.

The Aspen and Balsam Poplar occur throughout the province while the Large-toothed Aspen and Cottonwood are restricted to the more southerly regions.

### TREMBLING ASPEN—*P. tremuloides* (*illustrated Page 20*)

Young trees have a very light-coloured bark and at a distance may be mistaken for White Birch. Older trees have dark, firm ridges.

### LARGE-TOOTHED ASPEN—*P. grandidentata* (*illustrated Page 21*)

The name comes from the form of the leaves which have wavy margins with prominent teeth. The bark has wide flat ridges on older trees, while young trees have smooth bark with a yellow colour.

### COTTONWOOD—*P. deltoides* (*illustrated Page 22*)

The bark is light grey. In older trees the large ridges are of a corky nature and very prominent. We are told that in the early days the fishermen used this large, thick bark as floats for their nets.

### BALSAM POPLAR—*P. balsamifera* (*illustrated Page 22*)

Balsam Poplar is distinguished by the buds being large and sharp pointed, heavily coated with a gummy balsamic fragrant resin. In old trees the bark is dark, with firm ridges.

## GENUS JUGLANS — The Walnuts

### JUGLANS NIGRA—Black Walnut (*illustrated Page 24*)

The Black Walnut was originally found in the southern portion of Ontario in the Carolinian zone. Black Walnut prefers deep, rich loamy soil and is usually found in mixture with other hardwoods.

The bark is dark with ridges diagonally fissured.

Some very large specimens existed, as illustrated by plate 7d, page 24, which was photographed in 1908 in Rondeau Park. This tree was cut at least 50 years previously and was estimated to have been around 5 ft. in diameter.

The wood is a dark brown and has valuable technical qualities, being used for furniture and interior finish. A large quantity was exported to Germany for gun-stocks previous to 1914.

### JUGLANS CINEREA—The Butternut (*illustrated Page 23*)

The Butternut was originally found farther north than the Black Walnut, its northern boundary being the limestone formation.

The wood is similar in texture to the Black Walnut, but lighter in colour and softer.

The bark is a light ashen-grey in colour, with ridges flattened on top.

## GENUS CARYA — The Hickories

The Hickories and Walnuts belong to the same family. The flowers of the Hickories resemble those of the Walnuts. Gray's Manual of Botany gives 10 species and several varieties in North America, with 6 occurring in Ontario. Considerable difficulty has arisen in identifying certain species, as hybridization seems to occur, which will be discussed in describing the species.

The wood of the Hickories makes it one of our most valuable timber trees, owing to its splendid technical qualities. At one time it was unsurpassed for use in the building of carriages.

### BITTERNUT—*C. cordiformis* (*illustrated Page 25*)

Leaves 5-9, buds ovoid and long; sulphur-yellow in colour. Nuts not edible. Bark is close and fissures very shallow, often appearing in diamond-shaped areas. Wood inferior to that of the following species.

### SHAGBARK—*C. ovata* (*illustrated Page 25*)

Tree with grey bark, splitting into long loose plates. Leaves 5-7. The most common species in Southern Ontario. Wood of best quality.

### KINGNUT OR BIG SHELLBARK—*C. laciniosa* (*illustrated Page 26*)

The Kingnut Hickory is restricted to the southerly or Carolinian zone of Ontario and resembles the Shagbark but is less common. Leaves 7-9. Buds larger and less pointed. Fruit is larger, and the bark less shaggy than Shagbark.



MOCKERNUT—*C. tomentosa* (illustrated Page 26)

The Mockernut is quite rare, occurring along the southern fringe of the Lake Erie area. The fruit has a thick shell, with little meat, hence its name. The bark is quite different from the other hickories, being in firm dark ridges. The wood equals that of Shagbark.

PIGNUT—*C. glabra* (illustrated Page 27)

The Pignut is the most variable of the hickories in its bark features. In younger trees the bark is in firm ridges but later the ridges are flattened and become slightly shaggy. The buds resemble Shagbark buds but are smaller. The twigs are reddish-brown and glabrous, being more slender than the previous species. Leaves 5. Fruit is small but edible, the husk tardily opening at one or two sutures.

SWEET PIGNUT—*C. ovalis* (illustrated Page 27)

The Sweet Pignut is found in the Niagara Peninsula and along Lake Erie; at times it is confused with *Glabra*. Gray's Manual gives several varieties of *Ovalis* and it is supposed to hybridize with *Glabra*. Bark is light grey and quite scaly. Leaflets usually 7. Fruit is same size and appears as *Glabra* but husk splits on all sutures.

## GENUS OSTRYA

IRONWOOD OR HOP-HORNBEAM—*Ostrya virginiana* (illustrated Page 28)

The Ironwood is a southern tree occurring as an understory in mixed woods. The wood is very hard and strong, being used for tool handles and mallets. The bark of the Ironwood is broken into narrow loose strips, scales coming off easily. It is light grey in colour.

## GENUS CARPINUS

BLUE BEECH—*Carpinus caroliniana* (illustrated Page 28)

Blue Beech like Ironwood is found as an understory in mixed woods. This small tree is found in low, moist soils especially along streams. The bark is vertically corrugated, smooth, thin and bluish-grey.

## GENUS BETULA — The Birches

Betula has 14 species in North America, with 4 species occurring in Ontario. The Paper or Canoe Birch is the most common, being found to the extreme north of the province. Like the Poplar, it is a short-lived tree, often coming in after fire. The catkin containing the seed is persistent into the winter and one often sees the small seeds drifting for miles on the snow surface.

BLACK OR CHERRY BIRCH—*B. lenta* (illustrated Page 29)

This tree attains a height of 50-60 ft. with diameters up to 2-3 ft. It is one of the common birches in the North-eastern States and runs over into the Maritimes and Eastern Quebec. It was at one time confused with the Yellow

Birch but at the present time authentic specimens found in Ontario occur near St. Catharines on the shores of Lake Ontario.

The bark of young trees is dark brown with cherry-like lenticels on the shiny bark. On older trees the dark bark is broken into large, thick irregular plates. The wood is dark brown and is similar to Yellow Birch.

YELLOW BIRCH—*B. lutea* (*illustrated Page 30*)

Yellow Birch is not as well distributed as the Paper Birch, not being found to any extent in the lower portion of the James Bay Watershed. It seems to have its maximum development in the Laurentian Shield as far west as the southern portion of the Sault Ste. Marie district. In the above region it is one of our finest trees, reaching diameters of 3-4 ft. with clean boles of 60 to 100 ft.

The bark on average trees is yellowish, thin, in curly strips with a ragged look. On large trees it breaks into brownish plates.

The wood is fine-grained and of a reddish colour, being valued as interior finish, flooring, furniture and veneer work.

WHITE OR GREY BIRCH—*B. populifolia* (*illustrated Page 31*)

The Grey Birch is found in the St. Lawrence Watershed, also in an isolated area lying near Goderich in the Lake Huron Watershed.

It is a small tree as compared to either the Yellow or Paper Birch. The bark on mature trees is a creamy white colour not peeling off as in the Paper Birch. Below in the lateral branches is a black triangular marking characterizing the bark.

PAPER OR CANOE BIRCH—*Betula papyrifera* (*illustrated Page 31*)

The bark of this birch is white or creamy, peeling off in loose strips, exposing a reddish-orange colour. This birch is found in almost every part of the province. Specimens as large as 2 ft. in diameter are common.

## GENUS FAGUS — The Beech

BEECH—*F. grandifolia* (*illustrated Page 32*)

The Beech is a common tree throughout Southern Ontario extending into the southerly portion of the Laurentian Shield. The bark of Beech is smooth and of a light bluish-grey colour. Specimens of this tree range up to 100 ft. in height and 2 to 3 ft. in diameter.

The imported European Beech (*F. sylvatica*) in various varieties is planted in Southern Ontario.

## GENUS CASTANEA — Chestnut

CHESTNUT—*C. dentata* (*illustrated Page 33*)

The Chestnut was found in the most southerly portion of Ontario in the Carolinian zone. It was a common and valuable tree throughout the North-eastern States. It was originally distributed from Maine to Michigan and as far



south as the higher altitudes of Delaware to Mississippi and some of the Southern States. In Ontario it was found in the Carolinian zone as far east as Oakville district, through the Niagara Peninsula west to Lake St. Clair. Usually found on warm, sandy loam soils. An important tree in our forest, it has practically disappeared owing to the Chestnut Bark disease. On old trees the bark was deeply fissured with firm ridges of light to grey colour.

The wood was light brown in colour and very durable in contact with the soil. The edible, sweet Chestnut was a source of revenue to many woodland owners in Southern Ontario.

## GENUS QUERCUS – The Oaks

This genus consists of one of the most important groups of trees existing in Ontario, owing to their physical qualities, great strength, and the commercial value of their wood. Gray's Manual of Botany lists 27 species in America, of which 8 are found in Ontario. The Oaks are usually classed under two groups; the Black Oak group maturing its fruit in two seasons, and the White Oak group in one.

### WHITE OAK—*Q. alba* (*illustrated Page 34*)

The White Oak is found in older Ontario, with its northern range in a fringe of the Laurentian Shield from Georgian Bay to Ottawa. Its wood was probably the most important as to quality and use in many industries. It no longer exists in commercial quantities. The author saw a record of a White Oak timber which squared 5 ft., cut in Norfolk in the early days. The bark is usually light grey in colour. Small ridges and scaly. Occasionally we find a specimen tending to a plated character.

### BURR OR MOSSY-CUP OAK—*Q. macrocarpa* (*illustrated Page 34*)

Burr Oak has a wide range in Ontario, being found to the Height of Land and specimens have been found in the Southern Clay Belt.

The bark is brown with firm ridges in older trees. Much darker than White Oak. In younger trees the lower branches have a drooping appearance. Usually found on heavy soil or damp sites.

### YELLOW OAK—*Q. Muehlenbergii* (*illustrated Page 35*)

Yellow or Chestnut Oak is found in the Niagara Peninsula and along Lake Erie west to Lambton County on Lake Huron; in Prince Edward County, and on the St. Lawrence shore west of Kingston. This oak hybridizes with the White Oak. The bark of this oak has light grey ridges which are loose and scaly. Leaves resemble those of the Sweet Chestnut.

### ROCK CHESTNUT OAK—*Q. prinus* (*illustrated Page 35*)

The Rock Chestnut Oak is reported to occur in the Lake Erie region of Ontario but the author has yet to see an authentic specimen. The illustration given is from one secured in Pennsylvania, where it is a common tree especially

in the northern region. The bark on the trunk has dark brown ridges divided into long, broad and continuous fissures. The leaves of the Rock Chestnut Oak are similar to the Yellow Oak.

RED OAK—*Q. rubra* (*illustrated Page 36*)

The Red Oak is found as far north as the Height of Land. It reaches its best development in the southern portion of its range and is the most important of the Black Oak group.

The bark on the Red Oak has shallow furrows with long flat-topped ridges. The upper portion of the trunk and branches is quite smooth and of a greenish colour.

BLACK OAK—*Q. velutina* (*illustrated Page 36*)

The Black Oak is found in the South-western parts of Ontario on sandy, gravelly plains. Black Oak bark is broken by deep furrows into thick ridges which are divided by cross fissures.

PIN OAK—*Q. palustris* (*illustrated Page 37*)

The Pin Oak is limited in distribution to parts of the Niagara region and in the Lake Erie area. It is very common in the Niagara Peninsula on very wet, heavy, clay soils.

The wood is of the least value of the Oaks, being coarse and checking in seasoning.

It is valued for landscape planting owing to its form and the red colour of its leaves in autumn.

SWAMP WHITE OAK—*Q. bicolor* (*illustrated Page 37*)

This tree is restricted to the southerly portion of older Ontario in the Carolinian zone. Habitat is on damp sites, edges of streams or swamps.

The bark on older trees is light grey with flat ridges. Usually distinguished by the unkempt loose scaly bark on branches.

## GENUS ULMUS (The Elms)

Gray's Manual of Botany lists 7 species of Elms for Central North-eastern United States and Canada. Our common Elm, the American or White Elm, like the Maple is a part of almost every landscape in older Ontario. It is at present threatened with extinction owing to the Dutch Elm Disease.

RED OR SLIPPERY ELM—*Ulmus rubra* (*illustrated Page 38*)

This Elm is found to the Height of Land and occasionally in the James Bay Watershed or river bottoms. The Red Elm is inferior to either of our other two Elms. It is a medium-sized tree, reaching a height of 40 to 70 ft., with a diameter of 1 to 2 ft. The bark is rough and brown, with no prominent ridges as the other elms. It can be distinguished by its fragrant, mucilaginous inner bark, from which it derives its name.



AMERICAN OR WHITE ELM—*U. americana* (*illustrated Page 39*)

The American Elm, our most common Elm, develops into one of our most majestic trees, reaching 90 to 125 ft., with diameters of 3 to 6 ft. The bark is dark grey with flat-topped ridges, showing at the side layers of whitish bark.

ROCK OR CORK ELM—*Ulmus Thomasi* (*illustrated Page 38*)

The Rock Elm is found in Southern Ontario and extends into the Ottawa-Huron district. It has its best development in limestone formations.

Rock Elm is superior to the other Elms in strength, hardness and toughness, and was exported as squared timber to Great Britain.

GENUS *CELTIS*

HACKBERRY OR SUGARBERRY—*C. occidentalis* (*illustrated Page 40*)

The Hackberry is found at isolated places from the western watershed of the St. Lawrence to the western counties of Southern Ontario. Very common in the Point Pelee area. Resembles the Elm in form and character of wood, which equals that of Rock Elm.

Specimens of 100 ft. in height and up to 2 and 4 ft. in diameter are found in Southern Ontario.

Bark occasionally smooth but usually rough with wart-like projections.

GENUS *MORUS*

RED MULBERRY—*Morus rubra* (*illustrated Page 41*)

The Red Mulberry is a small tree found in the Carolinian zone of Southern Ontario. Sometimes confused with the White Mulberry (*Morus alba*) introduced from Asia, where it was the food of the silk worm.

Bark on young trees dark brown and smooth, later on peeling off in long flakes.

GENUS *MAGNOLIA*

CUCUMBER TREE—*M. acuminata* (*illustrated Page 42*)

The Cucumber tree is found in the Carolinian zone of the Lake Erie region.

Magnolias are trees and shrubs of temperate eastern and tropical America and parts of Asia. Gray's Manual of Botany lists 5 species for America, with one occurring in Ontario in the Lake Erie region. Cultivated forms of imported Asiatic magnolias with larger and more showy flowers are common in Southern Ontario.

The bark of the Cucumber tree is greyish with long furrows and loose scaly ridges.

## GENUS LIRIODENDRON — Tulip Tree

TULIP-POPLAR—*L. tulipifera* (*illustrated Page 43*)

The Tulip tree is the only species of this genus found in America, with one species found in China. Fossil remains of this tree are found most widely distributed on this continent and in Europe.

The Tulip tree is one of the most stately of our deciduous trees. In the Appalachian region specimens are on record of over 200 ft. in height, with diameters of 10 ft., with clear boles up to 100 ft. This is a tree which should be given more attention in Ontario's landscape and forestry programme in the southern districts.

In young trees the bark is smooth and ashy-grey. Older trees assume a bark character of long and regular furrows and ridges.

## GENUS ASIMINA

PAWPAW—*A. triloba* (*illustrated Page 44*)

The Custard Apple family, Annonaceae, comprises about 40 genera, with 600 species confined mostly to the tropics. The Pawpaw is the only representative of this family found in Canada and that along the southern fringes of Ontario. It is found in the Niagara Peninsula and more frequently in the south-westerly counties of Essex and Kent.

A small tree usually 10 to 35 ft., with a diameter up to 10 inches. Twigs are rather slender, round, and olive-brown. Flowers appear late April to May, at first green, petals turning to purple-red. Fruit suggests a small banana, 3 to 5 inches in length; contains many shiny brown seeds. It contains an aromatic yellow pulp which is edible.

Pawpaw is usually found in river bottoms with rich, moist soils.

## GENUS SASSAFRAS

SASSAFRAS—*S. albidum* (*illustrated Page 45*)

One species in America and two in Eastern Asia. The above species is found in southern Ontario, where it develops into tree form. It has a spicy-aromatic bark, which on older trees is reddish-brown, deeply fissured, with flat ridges.

## GENUS PLATANUS

SYCAMORE OR BUTTONWOOD—*P. occidentalis* (*illustrated Page 46*)

The Sycamore is the only species native to Ontario. Its range is in southern Ontario, being found sparingly as far north as the foot of Bruce Peninsula. This is one of Ontario's largest trees, with diameters of 5 ft. and over, and heights of 100 to 150 ft.



The Sycamore is easily recognized by its bark, which is rough, dark brown at the base, flaking off in loose scales. In young trees and in the upper part of older ones the irregular thin plates flake off leaving greenish-yellow bark which fades to whitish blotches.

The imported Oriental Plane (*P. orientalis*) is used frequently in street and landscape planting.

## GENUS AMELANCHIER

JUNEBERRY OR SHADBUSH—*A. canadensis* (*illustrated Page 47*)

This is the only representative of this Genus in Ontario which develops into tree form. A small tree that occasionally reaches a diameter up to 18 inches. It is the first to burst into bloom of white in the early spring. It is often mistaken for wild cherry, along the roadside.

The bark is smooth grey in young trees but with age it becomes ridged and scaly.

## GENUS PRUNUS

PIN OR FIRE CHERRY—*P. pennsylvanica* (*illustrated Page 48*)

The Pin Cherry is widely distributed throughout Ontario. This small tree reaches 25 to 30 ft. in height, with a diameter up to 8 or 10 inches.

The bark on younger trees is reddish-brown and smooth, with prominent, orange-coloured lenticels. When older, it is slightly roughened.

The Pin Cherry is found on roadsides, clearings and burned-over areas where it plays an important part as a nurse crop for future, more valuable forest crops.

BLACK CHERRY—*P. serotina* (*illustrated Page 48*)

The largest and most important of the Cherry family. Found in Ontario as far north as the Height of Land but reaching its best development in southern Ontario where it reaches a height up to 100 ft., with diameters of 3-4 ft.

The wood is moderately hard, coloured rich reddish-brown, fine-grained and at one time a popular furniture and finishing wood. The bark on young trees is dark and smooth with whitish horizontal lenticels. In old trees it is dark, roughened by thin plates with projecting edges.

## GENUS GYMNOCLADUS

KENTUCKY COFFEE TREE—*G. dioica* (*illustrated Page 49*)

The Coffee tree is not a common tree. It occurs in the Lake Erie zone but has been planted in areas north of its original habitat. It is a medium-sized tree 50 to 80 ft. in height, with diameters up to 2 ft.

This tree is readily identified by its stout, blunt twigs covered by a whitish crust-like layer. It has a characteristic bark, greyish in colour and thin, and thin firm flaky ridges curling outwards.

## GENUS GLEDITSIA

HONEY LOCUST—*G. triacanthos* (*illustrated Page 50*)

A tree belonging to the Legume family. A medium-sized tree 50 to 60 ft. high, with diameters of 2 to 3 ft.

Bark on young trees is smooth with conspicuous, elongated lenticels; on older trees it is somewhat roughened.

The species *triacanthos* is conspicuous by the branch being armed with rigid long-pointed three-pronged spines, three or more inches in length. There is a Honey Locust without spines which has been classed as a variety *Inermis*.

## GENUS CERCIS

REDBUD OR JUDAS TREE—*C. canadensis* (*illustrated Page 51*)

The Redbud is a small tree 25 to 30 ft. in height. It has been recorded as occurring in the Lake Erie region at Point Pelee (Macoun). Specimens are now found as far north as the north shore of Lake Ontario where they are partially hardy.

The tree is beautiful in early spring before the leaves have developed. The red pea-like flowers, in clusters on the twigs, make a pleasing sight. The fruit is a pea-like pod.

## GENUS ROBINIA

BLACK LOCUST—*R. pseudo-acacia* (*illustrated Page 50*)

The Black Locust is a native of the Eastern United States but has been planted so extensively in Ontario that we have included it as naturalized. A medium-sized tree 50 to 75 ft. in height, with diameters of one to two ft.

The Locust flower is very showy, appearing in June in large drooping white clusters. Wood is hard and durable in contact with the soil. Used for fence posts and as insulator pins.

Bark on both young and old trunks is rough, deeply furrowed with rounded ridges.

## GENUS PTELEA

HOP TREE—*P. trifoliata* (*illustrated Page 51*)

This is a small tree, usually a shrub, found only along Lake Erie but occasionally planted for its botanical interest. The Hop tree and a shrub, the Prickly Ash, are the only members of the Rutaceae family found in Ontario.

The bark is dark, reddish-brown with wart-like protuberances. The seed is similar to that of the Elm, being a samara, winged all around.

## GENUS ACER — The Maples

This genus comprises 70 species throughout the world. Ten species occur in Canada. Six species are native to Ontario with one, the Manitoba Maple, which has become naturalized.



The fruit of the Red and White Maple mature in the spring; the others in the autumn.

A number of exotic species have been introduced for ornamental planting, the most common being the Norway Maple (*A. platanoides*) and Sycamore Maple (*A. pseudoplatanus*).

SUGAR MAPLE—*A. saccharum* (*illustrated Page 52*)

The Sugar Maple is one of the most common, as well as the most important of Ontario's hardwoods. This tree is one of our tallest hardwoods, often reaching over 100 ft. in height and 2 to 3 ft. in diameter. Owing to its technical qualities, it has many uses in the arts. All of our maples yield a saccharine sap. However, this maple is the most important in the syrup and sugar industry.

The bark of this tree varies; in young trees it is dark grey with firm ridges, which in older trees develop into thick firm plates, often turning outwards on one edge.

BLACK MAPLE—*A. nigrum*

This tree was considered a variety of the Sugar Maple. It has no bark differences but the leaves and fruit are different. The leaves have a drooping appearance and their underside has a coating of velvety-brown hairs.

The Black Maple is found along the St. Lawrence and in Southern Ontario.

RED MAPLE—*A. rubrum* (*illustrated Page 53*)

It attains a height of 70-100 ft. and diameters up to 3 ft. Its range is from Nova Scotia to the Manitoba boundary but is not as plentiful as the Sugar Maple or Silver Maple.

The twigs and buds are a bright red. The leaves in autumn are red and differ from the Silver Maple which turn a dull yellow. The bark is dark grey and smooth in young trees. In older trees it is darker, peeling off in slender flakes which do not curl as in Silver Maple.

SILVER OR WHITE MAPLE—*A. saccharinum* (*illustrated Page 53*)

It attains a height of 80-100 ft. with diameters 2 to 3 ft. Occasionally it is found 125 ft. in height, with diameters of up to 5 ft. It ranges from New Brunswick to southern Quebec and Ontario. Its range in Ontario is more limited than the Sugar Maple, being found in the more southerly portion of the province.

The twigs are similar to those of the Red Maple but the leaves and fruit differ. The Sugar Maple leaf is 5-lobed, the Red usually 3-lobed. The fruit or samara in the Silver Maple is two-thirds larger than in the Red Maple.

The bark is light grey and peels off in older trees in long pieces, loose at each end.

STRIPED MAPLE—*A. pennsylvanicum* (*illustrated Page 54*)

The Striped Maple is a small tree 15 to 30 ft. high with diameters 4 to 7 ft. but more often a small shrub. Range is over most of Ontario, but rare in the south-western peninsula. The fruit is arranged on a main stalk (or raceme).

The bark is conspicuous, being thin and smooth, at first green streaked with white lines. On old stems it turns grey with darker bands.

#### MOUNTAIN MAPLE—*Acer spicatum*

The Mountain Maple is rarely more than a shrub. It ranges throughout Ontario.

The bark is thin, dark grey and on older stems slightly furrowed. A distinctive feature of this maple is the twig which is slender, dull reddish-brown, covered with short greyish hairs. The bud is stalked as with the Striped Maple, but smaller.

#### NORWAY MAPLE—*A. platanoides* (*illustrated Page 55*)

The Norway Maple is a European tree extending from Norway to Southern Europe. It attains a height of 70 to 90 ft. Its leaves resemble those of Sugar Maple but are larger.

Its leaf-petiole when broken exudes a milky sap. Its winter bud is blunt, rounded, and reddish-brown. The bark is black, neatly fissured into narrow ridges.

The tree is an attractive ornamental one, being used in cities, lawns and parks. It is very tolerant of city conditions.

#### SYCAMORE MAPLE—*A. pseudo-platanus* (*illustrated Page 55*)

The Sycamore Maple is a European species from Central Europe. It attains a height of 80 to 100 ft.

It is not as tolerant of soil conditions as the Norway Maple and is not so extensively planted.

The winter buds are large, obtuse, and green, differing from any other of our Maples.

The bark of the trunk is dark grey, flaking off in thin scales. The upper branches are light grey and smooth.

#### MANITOBA OR ASH-LEAVED MAPLE—*A. negundo* (*illustrated Page 54*)

This tree reaches a height of 60 to 75 ft. with diameters up to 2 ft. It has the habit of dividing near the ground into several stems or branches. The natural range is west of the Ontario-Manitoba boundary but it has become naturalized in Ontario, and owing to its rapid growth it has been planted to a considerable extent in Ontario.

The twigs are purplish or yellowish-green with a whitish bloom at times.

The Manitoba Maple differs from all other maples in having a compound leaf with 5 to 7 leaflets.

### GENUS *TILIA* — The Lindens

The Genus *Tilia* is the only representative of the Tiliaceae family found in America. Gray's Manual of Botany lists four species of which one is found in



Ontario. Two European species of Lindens, with varieties, have been introduced into Ontario.

BASSWOOD, LINDEN—*T. americana* (*illustrated Page 56*)

A large tree 100 ft. and over, with diameters up to 4 ft., it was quite common in the early days. Its range is from southern Ontario as far north as the Great Lakes Watershed.

It was the fourth most important hardwood sawn in the province. Wood is soft and light with fine and even texture.

Bark is dark grey, thick and tough. In old trees the bark is furrowed, rough and broken into thick-like scales.

## GENUS NYSSA — Black Gum, Pepperidge

BLACK GUM—*Nyssa silvatica* (*illustrated Page 57*)

Black Gum is a medium-sized tree usually 60-100 ft., with diameters up to 24 inches. Gray's Manual of Botany gives two species, one of which is found in the Lake Erie region. Wood is cross-grained and difficult to work; yellow in colour. Grows on very wet sites.

Bark grey, smooth to scaly on young trunks; on old trunks it is brown to greyish-black; very rough and broken into blocks; it is sometimes referred to as alligator bark.

## CORNACEAE — GENUS CORNUS

FLOWERING DOGWOOD—*C. florida* (*illustrated Page 58* )

There are twelve species given by Gray's Manual of Botany in North-eastern United States and Canada, mostly shrubs. Two species occur in Ontario, the above *C. florida* occurring in the Lake Erie region, and the Alternate-leaved Dogwood occurring as far north as the Height of Land.

The Flowering Dogwood is a small tree, 30 to 40 ft. in height, with diameters up to 12 inches. The individual flowers are small, greenish bodies, grouped into rounded clusters, each cluster surrounded by four, large white leaves, looking like petals, of arresting beauty. In the autumn the leaves, twigs and fruit are a reddish or scarlet colour.

The bark is dark-brown and broken into small square plates resembling alligator skin.

## GENUS FRAXINUS — The Ashes

The Genus Fraxinus is listed in Gray's Manual of Botany as having six species in North-eastern United States and Canada, of which four are found in Ontario, Green Ash is being considered as a variety of Red Ash as the bark is very similar.

WHITE ASH—*F. americana* (*illustrated Page 59*)

The White Ash is considered the most valuable of the Ashes. In height 60-100 ft. and diameters of 2 to 3 ft., with trunk tall and straight.

Wood is tough, elastic and owing to its technical qualities it is used in many ways as vehicles, agricultural implements, sporting goods. Bark is grey and thick, deeply furrowed into narrow, flattened, interlacing ridges.

RED ASH—*F. pennsylvanica* (*illustrated Page 59*)

Red Ash is usually a less-stately tree than White Ash but on good sites develops a height of 50-80 ft., with a diameter of 16 to 24 inches.

The twigs are more slender than those of the White Ash but are covered with a dense coat of velvety pubescence.

The bark resembles the White Ash but is much darker. The fissures are diamond-shaped.

BLUE ASH—*F. quadrangulata* (*illustrated Page 60*)

The Blue Ash is a medium-sized tree 60 to 80 ft. in height, 18 to 24 inches in diameter.

It is not a common tree, being found in the Lake Erie area, especially on the Thames River Watershed.

It is distinguished by its twigs and branches which are heavy and more or less four-sided, thus its name. The bark contains a resinous juice from which the Indians made a blue dye.

The bark of the trunk is light grey, in old trees broken into firm ridges, slightly scaly.

BLACK ASH—*F. nigra* (*illustrated Page 60*)

The Black Ash is a medium-sized tree 60 to 90 ft. in height, with diameter of 18 to 24 inches. It is found in the greater part of Ontario as far north as the Temiskaming area.

Twigs are light grey with buds dark brown to black.

This Ash was used by the Indians for basket-making and in many districts became very scarce.

Bark is light grey, older trees having greyish shallow furrows, tending to being scaly.

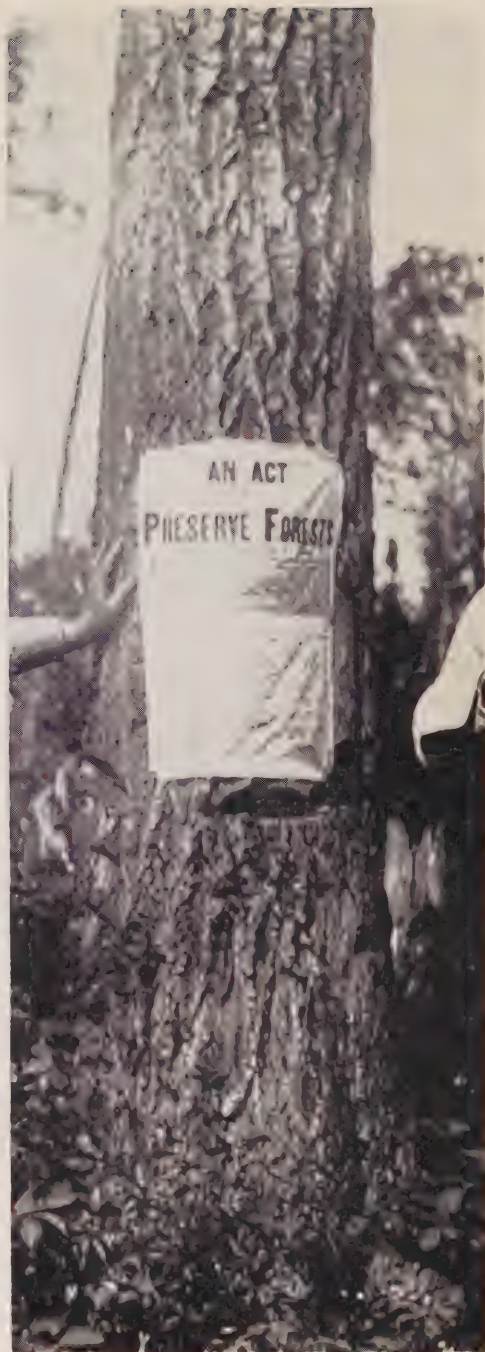




1. BLACK WILLOW (*Salix nigra* Marsh.). Diam. 18 in. Don River, Toronto.



2. ASPEN POPLAR (*Populus tremuloides* Michx.)- Diam. 12 in. Young Tree.



2a. ASPEN POPLAR (*Populus tremuloides* Michx.) Diam. 28 in. 1907 Clay Belt





3. LARGE-TOOTHED ASPEN. (*P. grandidentata* Michx.). Young Tree.



3a. LARGE-TOOTHED ASPEN. (*P. grandidentata* Michx.). Diam. 30 in. London. Ontario.



4. COTTONWOOD (*P. deltoides* Marsh.). Diam. 24 in. Lake Erie.



5. BALSAM POPLAR (*P. balsamifera* Du Roi). Diam. 5 ft. Rondeau Park. 1908.

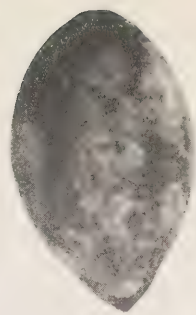




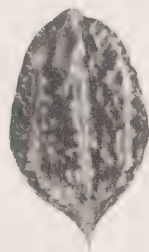
6.

6. BUTTERNUT (*Juglans cinerea* L.). Diam. 24 in.

6a & b. FRUIT. Norfolk Co.

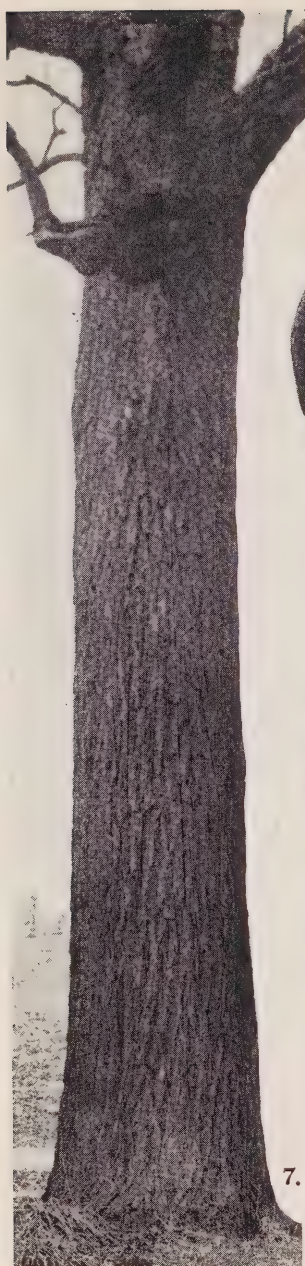


6a.



6b.





7a.



7b.



7c.



7d.

7. BLACK WALNUT (*J. nigra* L.). Diam. 3 ft. Burlington, Ontario.

7a & b. FRUIT 7c. Tree Diam. 42 in., Simcoe, Ontario.

7d. WALNUT STUMP, 1908. Diam. nearly 5 ft. Rondeau Park.



S. BITTERNUT HICKORY (*C. cordiformis* [Wang.] K. Koch).  
Diam. 24 in. Rondeau Park.



8a. SHAGBARK HICKORY (*Carya ovata*). Diam. 24 in.  
Rondeau Park.





9. KINGNUT HICKORY (*Big Shellbark* [*C. laciniosa*]). Diam. 24 in. Norfolk Co.



9a. MOCKERNUT HICKORY (*C. tomentosa* [Nutt.]). Diam. 30 in. State College, Penn., U.S.A.





10. PIGNUT HICKORY (*C. glabra*). Diam. 20 in. Lincoln Co.



10a. SWEET PIGNUT HICKORY (*C. ovalis*. Wang). Diam. 24 in. Lincoln Co.



11.

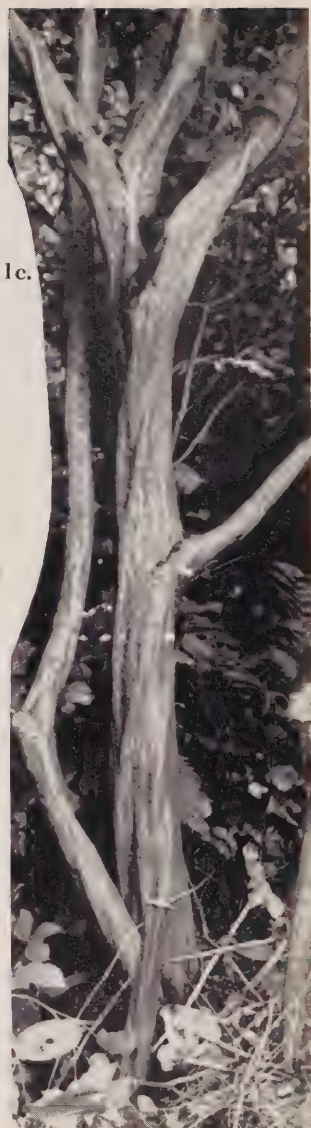


11b.

11a.



11c.



11. IRONWOOD (*Ostrya virginiana* [Mill.] K. Koch). Diam. 24 in. Victoria Co. 11a. IRONWOOD Normal Bark 11b. IRONWOOD Fruit 11c. BLUE BEECH (*Carpinus caroliniana* Walt.). Diam. 8 in. Norfolk Co.





12. BLACK OR CHERRY BIRCH  
(*Betula lenta* L.). Diam. 10 in. Young  
Tree.



12a. BLACK OR CHERRY BIRCH  
(*Betula lenta* L.). Diam. 30 in.  
Lincoln Co.





13. YELLOW BIRCH  
(*B. lutea* Michx f.).  
Diam. 18 in. Bark of  
Young Tree.



13a. YELLOW BIRCH (*B. lutea*  
*Michx* f.). Diam. 46 in., 60 ft. of  
clear stem. 1922 Algonquin Park.



14. PAPER OR CANOE BIRCH  
(*Betula Papyrifera* Marsh.). Diam.  
20 in. Algonquin Park, 1920.



14a. WHITE OR GREY BIRCH  
(*B. populifolia* Marsh.). Diam. 12  
in. St. Lawrence Area.





15. BEECH (*Fagus grandifolia* Ehrh.). Diam. 3 ft. Elgin Co.



15a. BEECH (*Fagus grandifolia* Ehrh.). Diam. 30 in., 60 ft. to first branch.





16.



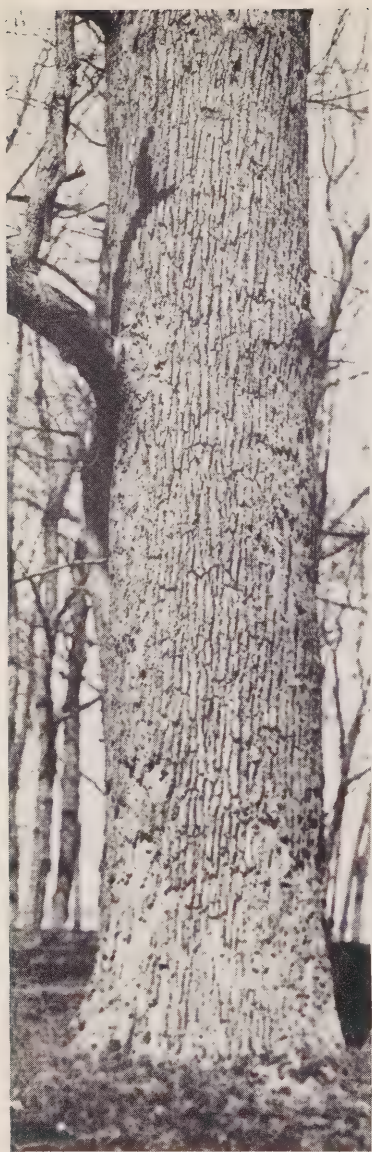
16b.



16a.

16. CHESTNUT STUMP. Diam. 4 ft. Tree Diam. 2 ft. Lincoln Co. 1905

16a. CHESTNUT (*Castanea dentata* Marsh.). Diam. 5 ft. Norfolk Co. 16b. BURR OR FRUIT.



17.



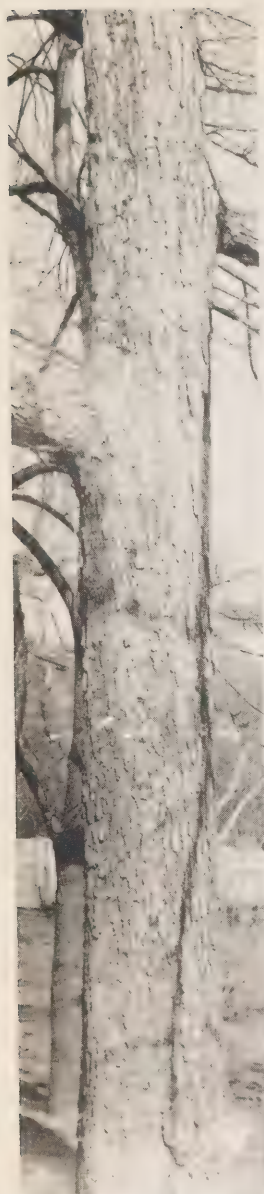
17b.



17a.

17. WHITE OAK (*Q. alba* L.). Diam. 4 ft. 1908. Rondeau Park. 17a. BURR OR MOSSY-CUP OAK (*Q. macrocarpa* Michx.). Diam. 30 in. London, Ontario. 17b. BURR OR MOSSY-CUP OAK (*Q. macrocarpa* Michx.). Showing pendulous branching.





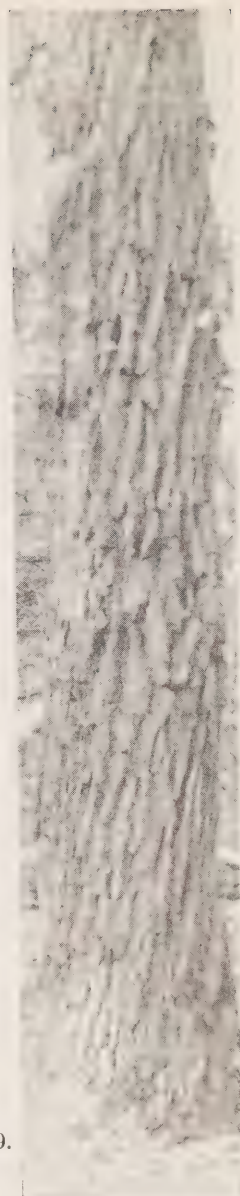
18.



18a.



19a.



19.

18. YELLOW OAK (*Q. muhlenbergii* Engelm.). Diam. 20 in. 18a. LEAF Niagara Falls, Ont. 19. ROCK CHESTNUT OAK (*Q. prinus* L.). Diam. 30 in. 19a. LEAF State College, Penn., U.S.A.





20.



20a.



21.

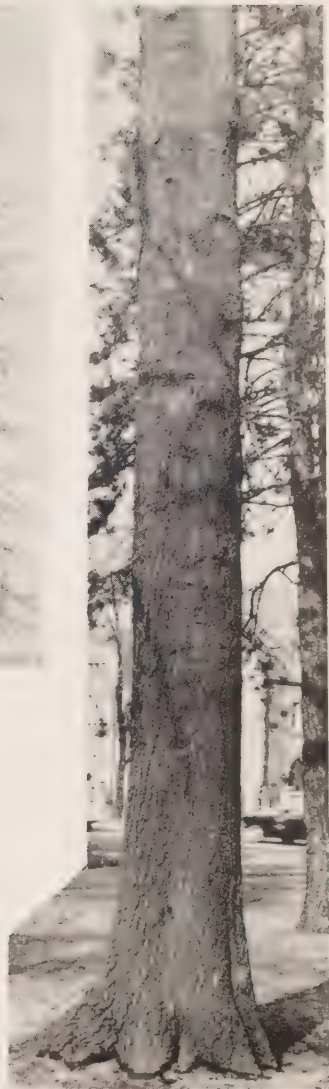
20. RED OAK (*Quercus rubra* L.). Diam. 30 in. Elgin. Co. 20a. RED OAK (*Quercus rubra* L.). Young Tree showing smoother bark. 21. BLACK OAK (*Q. velutina* Lam.). Diam. 3 ft. Norfolk Co.



22.



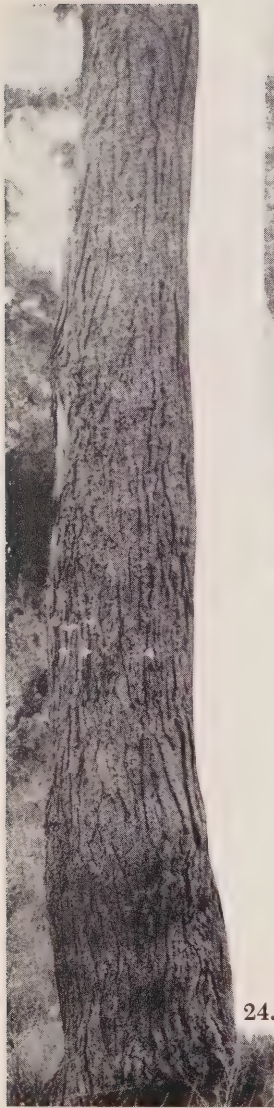
23a.



23.

22. SWAMP WHITE OAK (*Q. bicolor* Willd.). Diam. 36 in. Kent Co. 23. PIN OAK (*Q. palustris* Muench) Diam. 24 in. Welland Co. 23a. PIN OAK Showing pendulous branching.





25a.



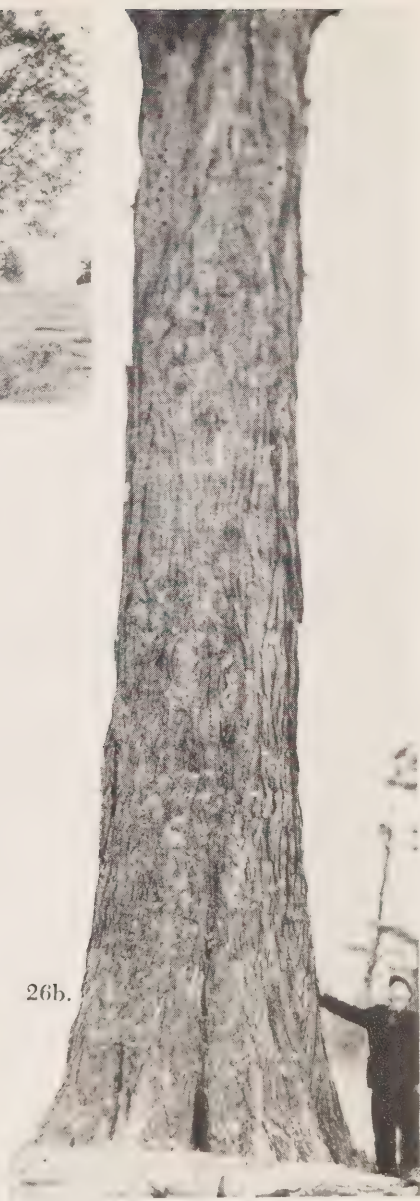
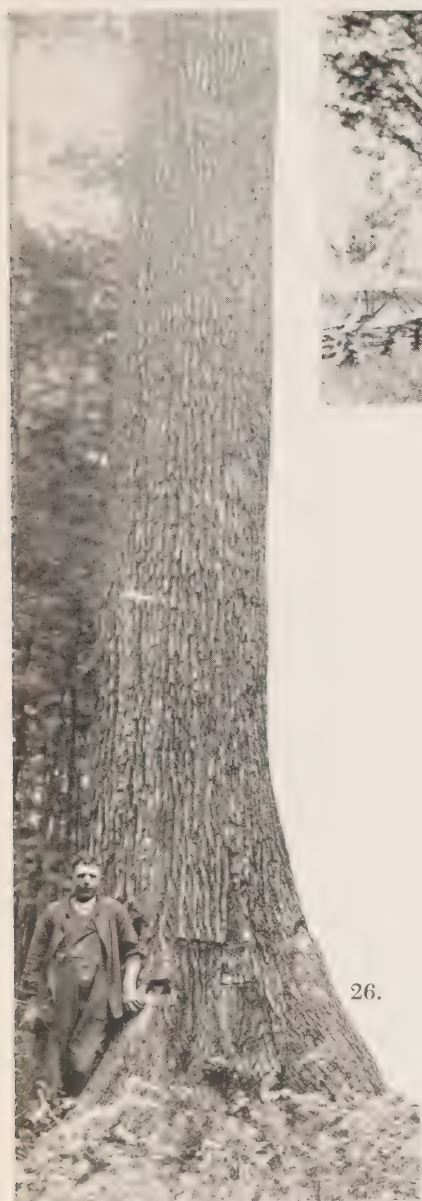
25.

24. RED OR SLIPPERY ELM (*U. fulva* Michx.). Diam. 20 in. Norfolk Co.

25. ROCK OR CORK ELM (*U. racemosa* Thomasi). Diam. 48 in. Carleton Co.

25a. ROCK OR CORK ELM (*U. racemosa* Thomasi). Showing pendulous branching. Courtesy of J. L. Van Camp.





26. AMERICAN ELM (*White Elm* [*Ulmus americana* L.]). Diam. 50 in. York Co. 26a. AMERICAN ELM (*White Elm* [*Ulmus americana* L.]). Diam. 5 ft. Simcoe Co. 26b. AMERICAN ELM (*White Elm* [*Ulmus americana* L.]). View in the landscape.



27.



27a.



27b.

27. HACKBERRY (*Celtis occidentalis* L.). Diam. 30 in. Middlesex Co.

27a. HACKBERRY showing bark. 27b. HACKBERRY (*Celtis occidentalis* L.). Diam. 5 ft. Norfolk Co.





28. RED MULBERRY (*Morus rubra* L.).  
Diam. 28 in. Peel Co.



28a. RED MULBERRY (*Morus rubra* L.). Younger tree Norfolk Co.

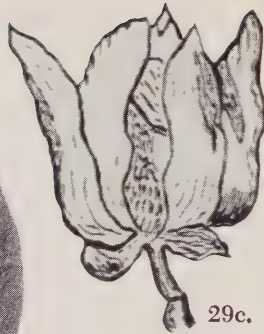




29.



29b.



29c.



29d.



29e.



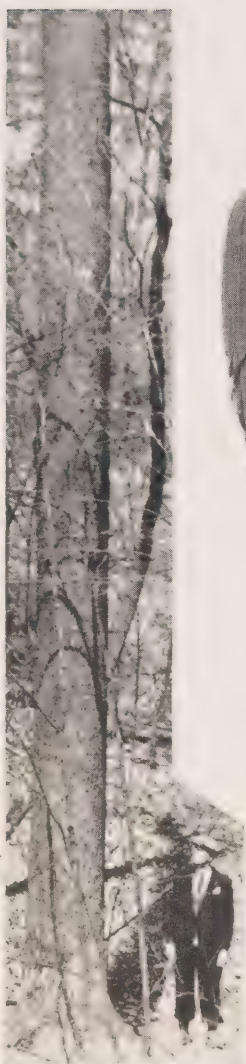
29a.



29. MAGNOLIA CUCUMBER TREE (*Magnolia acuminata* L.). Young tree Lincoln Co. 29a. MAGNOLIA CUCUMBER TREE (*Magnolia acuminata* L.). Diam. 4 ft. 29b. LEAF 29c. FLOWER 29d. FRUIT CLOSED 29e. FRUIT OPENED.



30.



30a.



30d.

30c.



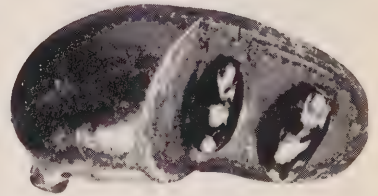
30b.

30. TULIP TREE (*Liriodendron tulipifera* L.). Diam. 30 in. Rondeau Park.  
 30a. TULIP TREE (*Liriodendron tulipifera* L.). Diam. 18 in. 90 ft. to first branch.  
 30b. LEAF 30c. FLOWER 30d. FRUIT.





31a.



31.

31b.

31. PAWPAW (*Asimina triloba* Dunal). London, Ont. 31a. FLOWER  
31b. FRUIT

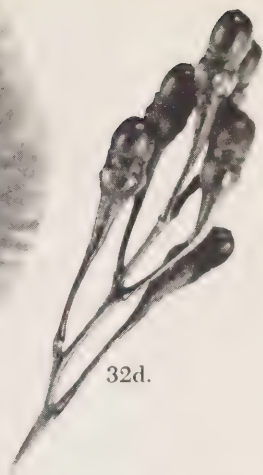




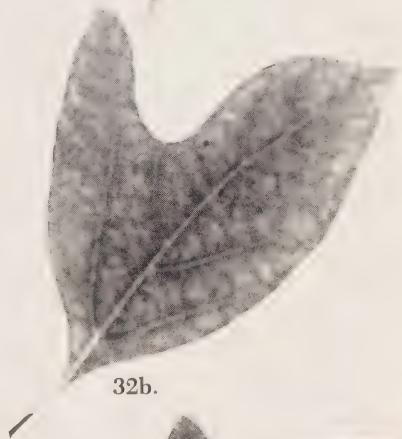
32.



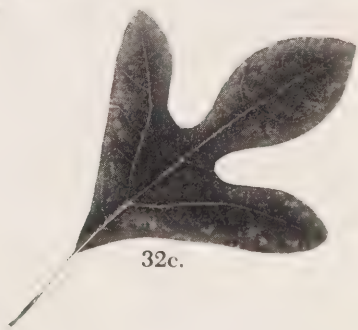
32a.



32d.



32b.



32c.

32. SASSAFRAS (*Sassafras albidum* [Nutt.]). Diam. 30 in. Norfolk Co.  
32a., b. & c. LEAVES 32d. FRUIT

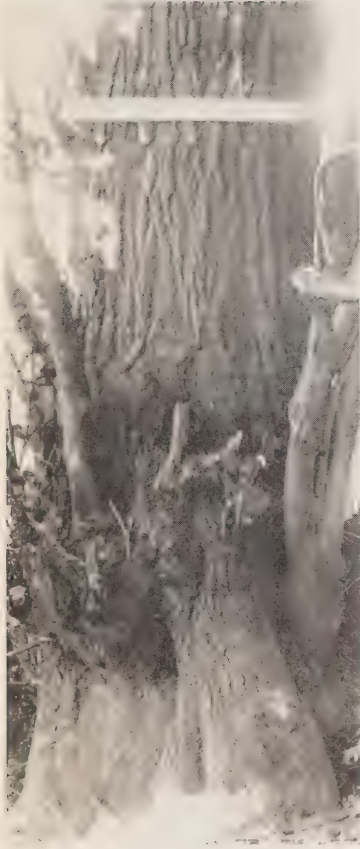


33. SYCAMORE (*Platanus occidentalis* L.).  
Diam. 5 ft. Rondeau Park, 1908.



33a. SYCAMORE showing  
bark.





34.

34b.



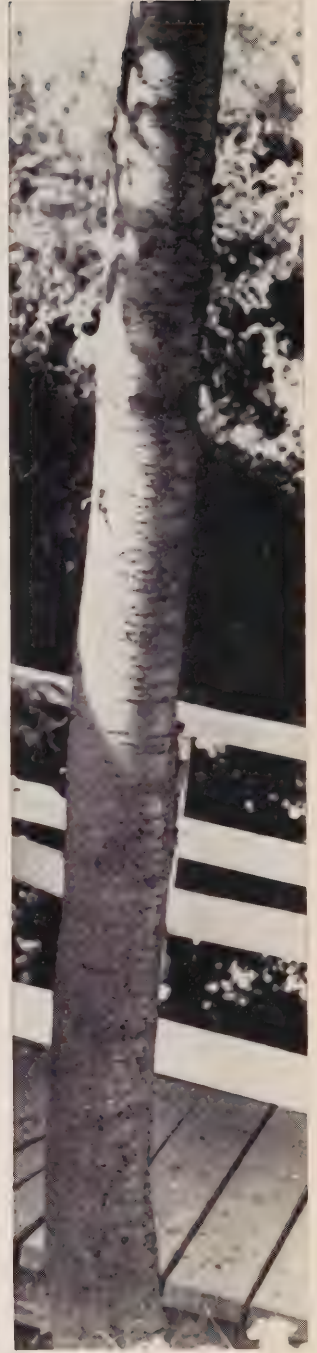
34a.

34. JUNE-BERRY OR SHADBUSH (*Amelanchier canadensis* [L.] Medic.).  
Diam. 18 in. 34a. JUNE-BERRY OR SHADBUSH in full bloom. 34b. FRUIT  
1910.

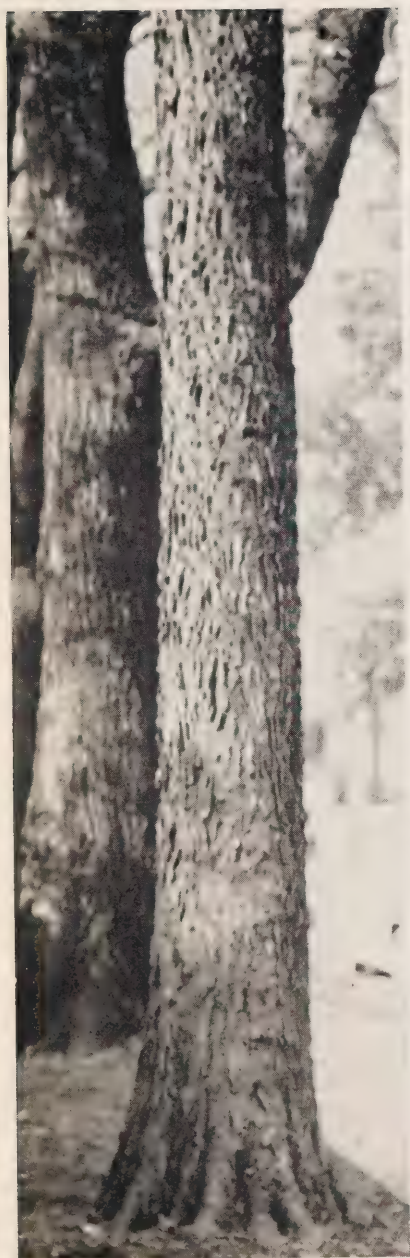




35. BLACK CHERRY (*P. serotina* Ehrh.).  
Diam. 30 in. O.A.C. Guelph.



36. PIN CHERRY  
(*P. pennsylvanica* L.).  
Diam. 10 in. Muskoka.



37.



37a.



37b.

37. KENTUCKY COFFEE TREE (*Gymnocladus dioica* [L.] Koch). Diam. 20 in. London Ont. 37a. FRUIT 37b. TWIG.





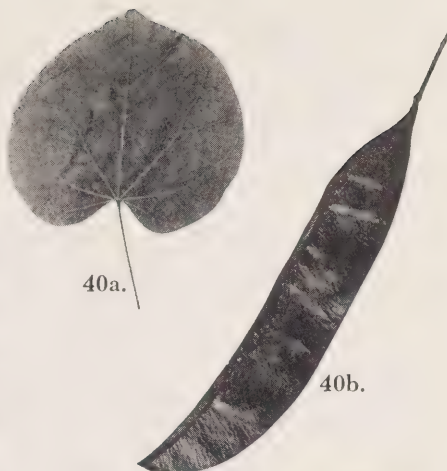
38. BLACK LOCUST (*Robinia pseudo-acacia* L.) Diam. 3 ft. Lincoln Co.



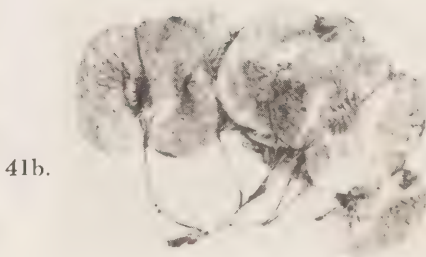
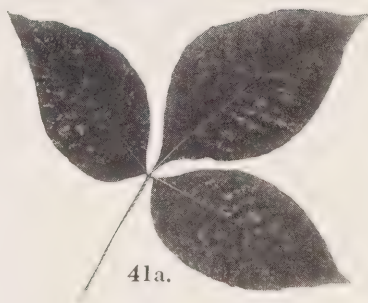
39. HONEY LOCUST. (*Gleditsia triacanthos* L.). Diam. 30 in.



40.



41.



41b.

40. RED-BUD OR JUDAS TREE (*Cercis canadensis* L.), Norfolk Co.  
40a. LEAF 40b. FRUIT

41. HOP-TREE (*Ptelea trifoliata* L.), Essex Co. 41a. LEAF 41b. FRUIT





42. SUGAR OR HARD MAPLE  
(*A. saccharum*). Diam. 30 in. 1908  
Lincoln Co.



42a. SUGAR OR HARD  
MAPLE (*A. saccharum*).  
Diam. 24 in. York Co.



43.



44.

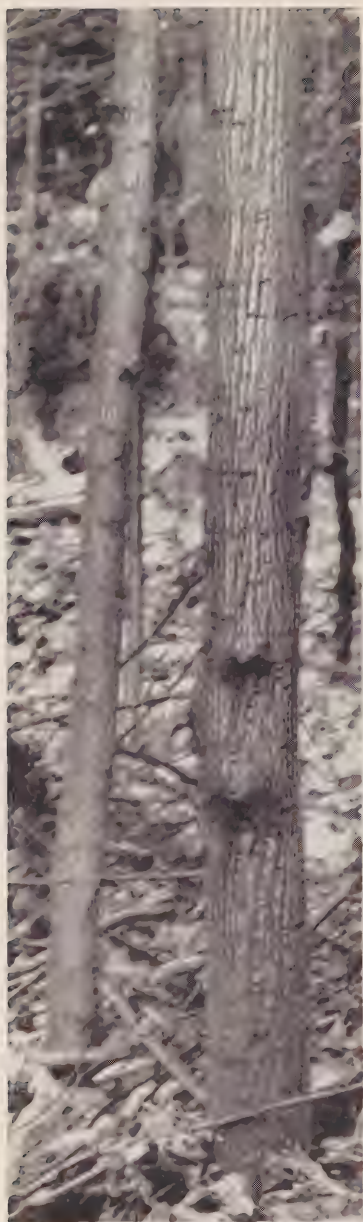


44a.

43. RED MAPLE (*A. rubrum* L.). Diam. 38 in. Elgin Co. 44. SILVER OR WHITE MAPLE (*A. saccharinum* L.). Diam. 12 in. Young tree Toronto.

44a. SILVER OR WHITE MAPLE (*A. saccharinum* L.). Diam. 24 in. Older tree Toronto.





45. STRIPED MAPLE  
(*A. pennsylvanicum* L.).  
Diam. 10 in. Presqu'Île Park.



46. ASH-LEAVED OR MANITOBA  
MAPLE (*A. negundo* L.). Diam. 14 in.  
Presqu'Île Park.



47. NORWAY MAPLE (*A. platanoides* L.). Diam. 18 in. York Co.



48. SYCAMORE MAPLE (*A. pseudo-platanus* L.). Diam. 16 in. York Co.





49. BASSWOOD OR LINDEN  
(*Tilia americana* L.). Diam. 58 in.  
Rondeau Park.



49a. BASSWOOD OR LINDEN  
(*Tilia americana* L.). Young Coppice.



50.



50a.



50c.



50b.

50. BLACK GUM OR PEPPERIDGE (*Nyssa sylvatica* Marsh.), Diam. 24 in. Norfolk Co. 50a. & b. BLACK GUM OR PEPPERIDGE (*Nyssa sylvatica* Marsh.), Diam. 30 in. 50c. BLACK GUM OR PEPPERIDGE. Typical horizontal branching.





51.



51b.

51a.



51. FLOWERING DOGWOOD (*C. florida* L.). Diam. 12 in. Lincoln Co.  
 51a. Tree in full bloom. 51b. Spray of Flowers. Norfolk Co.



52. WHITE ASH (*F. americana* L.). Diam. 3 ft. 52a. WHITE ASH (*F. americana* L.). Diam. 30 in., 60 ft. to first branch. Elgin Co. 53. RED ASH (*F. pennsylvanica* Marsh.). Diam. 24 in. Rondeau Park.





54. BLUE ASH (*F. quadrangulata* Michx.).  
Diam. 24 in. Middlesex Co.



55. BLACK OR SWAMP ASH  
(*F. nigra* Marsh.). Diam. 22 in.  
Rondeau Park.

















3 1761 11547280 5

